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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,832	01/30/2004	Nien-Lun Li	BHT-3230-83	3865

7590 01/25/2005  
TROXELL LAW OFFICE PLLC  
SUITE 1404  
5205 LEESBURG PIKE  
FALLS CHURCH, VA 22041

EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/766,832	LI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tho v Duong	3743	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

Receipt of applicant's amendment filed 11/10/2004 is acknowledged. Claims 8-13 are pending.

#### *Claim Objections*

Claim 11 is objected to because of the following informalities: "two heat zones" appears to be a typographical error of "two first heat zones" in line 2. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Barsun et al. (US 6,707,675). Barsun discloses (figure 3 and figure A as bellow) a heat sink comprising a base and a plurality of heat zones includes first heat zone and second heat zone fins (136), wherein each fin (136) is made of vertical plates and horizontal plates; the vertical plates of first heat zone fins is higher than the vertical plates of the second heat zone fins. Regarding claim 10, the first heat zone can be considered to be one heat zone including fins in the lower portion, and the second heat zones can be considered to have two heat zones (one on the left and one on the right shown in figure A). Regarding claim 11, the first heat zone can be considered to read as having two zones wherein one zone located on one end of the lower part and other zone located on the other end of the lower part as shown in figure A.

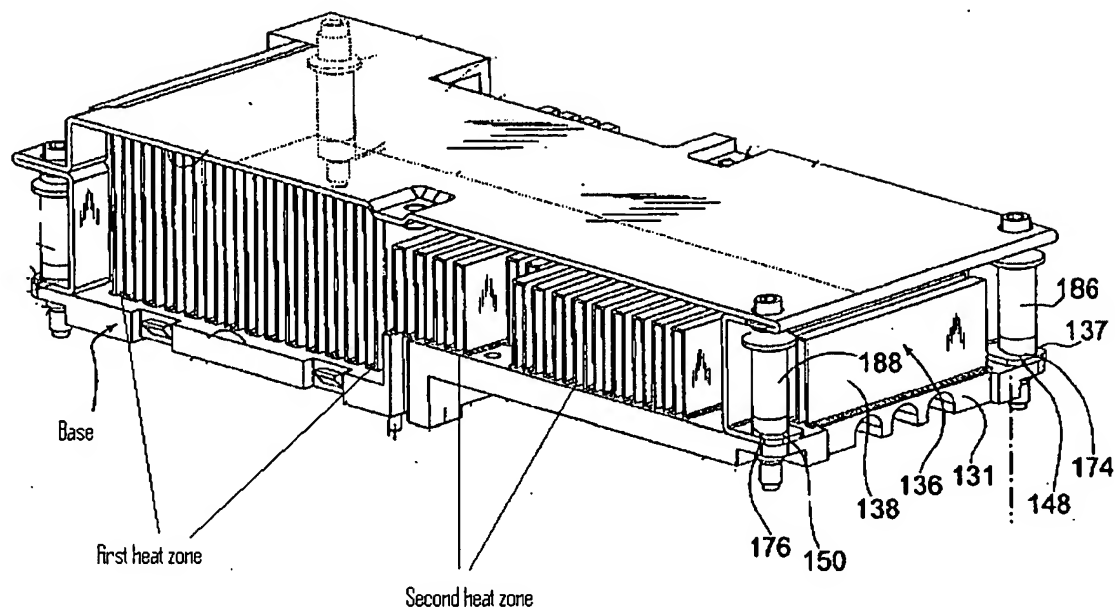


Figure A: The modified figure corresponds to figure 3 with limitation of heat zones shown

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barsun et al. in view of McCullough (US 6,367,541). Barsun substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the fins are made by a metal plate. It is well known in the heat sink art that fins are made of metal since metal has relatively high thermal conductivity. Attention is now directed to reference (6,367,541), McCullough discloses

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(figures 2, 3 and column 4, line 53- column 5, line 12) that a heat sink has an undulating fins made of bending a single aluminum plate for the purpose of providing a lightweight heat sink which is easy and inexpensive to manufacture. Since Barsun and McCullough are both from the same field and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use McCullough's teaching in Barsun's heat sink assembly for the purpose of providing a lightweight heat sink which is easy and inexpensive to manufacture.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barsun in view of Wyler et al. (US 6,401,807). Barsun substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the horizontal plate includes a rectangular hole. Wyler discloses (figure 7 and column 5, lines 50- 60) a heat sink that has a folded fin with its top horizontal plate equipped with a rectangular hole (16) for the purpose of permitting vertical air flow through the fin to draw heat along both sides of all of the walls adjacent to the horizontal plate. Since Barsun and Wyler are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Wyler's teaching in Barsun's device for the purpose of permitting vertical air flowing through the fin to draw heat along both sides of all of the walls adjacent the horizontal plate.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Self (US 6,735,082) discloses a heat sink with improved heat dissipation capability.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TD  
January 19, 2005



Tho v Duong  
Examiner  
Art Unit 3743